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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/691,711	10/18/2000	Jens Wildhagen	450117-02749	4972
20999	7590	11/30/2004	EXAMINER	
FROMMER LAWRENCE & HAUG 745 FIFTH AVENUE- 10TH FL. NEW YORK, NY 10151			TRAN, KHANH C	
			ART UNIT	PAPER NUMBER
			2631	

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/691,711	Applicant(s) WILDHAGEN, JENS	
	Examiner Khanh Tran	Art Unit 2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 10-12 is/are rejected.
- 7) ☒ Claim(s) 4-9 and 13-20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The Amendment filed on 06/30/2004 has been entered. Claims 1-20 are pending in this Office action.

Response to Arguments

2. Applicant's arguments, see pages 7-8 of the Remarks, filed on 06/30/2004, with respect to claims 1 and 3 have been fully considered and are persuasive. The rejection of claims 1 and 3 under 35 U.S.C 112, first paragraph, has been withdrawn after Applicant clarified the claimed subject matter.

3. Applicant's arguments, see pages 7-8 of the Remarks, filed on 06/30/2004, with respect to claims 1, 3 and 8 have been fully considered and are persuasive. The rejection of claims 1, 3 and 8 under 35 U.S.C 112, second paragraph, has been withdrawn after Applicant amended claims.

4. Applicant's arguments with respect to claims 1-3 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3, 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reich U.S. Patent 4,827,515.

Regarding claim 1, Reich invention is directed to a digital demodulator for demodulating and separating the individual components of a digitized multiplex signal. Hence, The digital demodulator corresponds to the claimed stereo demultiplexer in the preamble.

As shown in figure 1, the digital demodulator, receiving a digitized composite signal s_x , outputs a stereo sum signal s_s , a pilot signal p_s , and a stereo difference signal d_f . In view of the foregoing disclosure, the digitized composite signal s_x corresponds to the claimed frequency demodulated stereo-multiplex signal, see also figure 2.

In column 4 lines 40-59, the variable oscillator v_o is part of a phase-locked loop which is completed via the carrier conditioning circuit t_r , one of the five carriers t_1 - t_5 with the respective associated low-pass filter b_1 - b_4 , b_6 , and the control signal s_t . In view of the foregoing teachings, the digital demodulator as illustrated in figure 1 includes a phase-locked loop in the form of a variable oscillator v_o , the carrier

conditioning circuit tr, one of the five carriers t1-t5 with the respective associated low-pass filter b1-b4, b6, and the control signal st.

Reich does not expressly disclose that the phase-locked loop receives the sampling rate decimated stereo-sum signal as input signal as claimed in the instant application. Nevertheless, in column 3 lines 60-68, the output of the second decimation circuit d2, namely ds', containing the decimated stereo sum signal ss and the pilot signal ps, is inputted to the phase-locked loop as described above. Because the signal d2 includes the stereo sum signal ss, it would have been obvious for one of ordinary skill in the art at the time the invention was made that the phase locked loop receives the stereo sum signal ss as an input signal. Claim 1 is rendered obvious over Reich teachings because claim 1 does not claim the decimated stereo-sum signal, being the only input signal to the phase locked loop.

Regarding claim 2, referring back to figure 1, the second decimated composite signal ds', containing the stereo sum signal ss, is decimated two times by a first decimation circuit d1 by a factor M and further by a second decimation circuit d2 by another factor, e.g. 3, before being inputted to the phase locked loop as discussed above.

Regarding claim 3, claim 3 is rejected on the same ground as for claim 1 because of similar scope. Furthermore, Reich does not show a recovered pilot carrier,

Art Unit: 2631

which is interpolated so that it has a sampling rate equal to that of the frequency demodulated stereo-multiplex signal.

Referring back to figure 1, output carrier t_3 of the phase-locked loop, used to demodulate the stereo difference signal, has a sampling rate substantially equal to that of the decimated standard stereo multiplex signal ds . First, t_3 is derived from the pilot signal ps , which is derived from the signal ds' . The signal ds' is decimated by a decimator d_2 . From figure 1, because the signal ds' and the pilot signal ps have lower sampling rate than the input to m_3 , it would have been obvious for one of ordinary skill in the art at the time the invention was made that the recovered carrier t_3 must be interpolated in order to have the same sampling rate as the stereo multiplex signal ds . The motivation is that the carrier t_3 must have the same sampling rate as that of the stereo multiplex signal ds since the sampling rate of both signals must be the same in order to demodulate the stereo difference signal from the input standard stereo multiplex signal ds .

Regarding claim 10, claim 10 is rejected on the same ground as for claim 1 because of similar scope. Furthermore, referring to figure 1 again, in column 3 lines 1-30, output carriers t_3 , t_4 , t_5 from the phase locked loop are multiple frequencies of the pilot signal frequency. As result of that, carriers t_3 , t_4 , t_5 are harmonic of the pilot signal pv .

Art Unit: 2631

Regarding claim 11, claim 11 is rejected on the same ground as for claim 2 because of similar scope.

Regarding claim 12, claim 12 is rejected on the same ground as for claim 3 because of similar scope.

Allowable Subject Matter

6. Claims 4-9 and 13-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Green U.S. Patent 6,694,026 B1 discloses "Digital Stereo Recovery Circuitry And Method For Radio Receivers".

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh Tran whose telephone number is 571-272-3007. The examiner can normally be reached on Monday - Friday from 08:00 AM - 05:00 PM.

Art Unit: 2631

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KCT

Khanh Cong Tran
KHANH TRAN

11/26/04